

## FEATURES

- For surface mounted application
- Low forward voltage drop
- High current capability
- Easy pick and place
- High surge current capability
- Plastic material used carries Underwriters Laboratory Classification 94V-0



SMAF



Cathode

## MECHANICAL DATA

- Case: SMAF Molded plastic
- Terminals: Pure tin plated, lead free
- Polarity: Indicated by cathode band
- Weight: 27mg (approx.)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

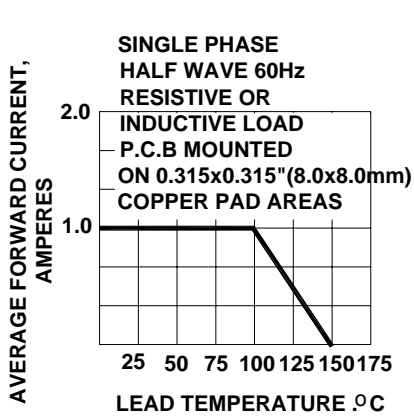
Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter   | Symbol          | S1AF                              | S1BF | S1DF | S1GF | S1JF | S1KF | S1MF | Unit               |
|---|-----------------|-----------------------------------|------|------|------|------|------|------|--------------------|
| Maximum Repetitive Peak Reverse Voltage   | $V_{RRM}$       | 50                                | 100  | 200  | 400  | 600  | 800  | 1000 | V                  |
| Maximum RMS Voltage   | $V_{RMS}$       | 35                                | 70   | 140  | 280  | 420  | 560  | 700  | V                  |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 50                                | 100  | 200  | 400  | 600  | 800  | 1000 | V                  |
| Maximum Average Forward Rectified Current at $T_L = 100\text{ }^\circ\text{C}$            | $I_{(AV)}$      | 1                                 |      |      |      |      |      |      | A                  |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC) | $I_{FSM}$       | 30                                |      |      |      |      |      |      | A                  |
| Maximum Instantaneous Forward Voltage at 1 A  | $V_F$           | 1.1                               |      |      |      |      |      |      | V                  |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                   | $I_R$           | $T_A = 25\text{ }^\circ\text{C}$  |      |      |      |      |      |      | $\mu\text{A}$      |
|   |                 | $T_A = 125\text{ }^\circ\text{C}$ |      |      |      |      |      |      |                    |
| Typical Junction Capacitance 1)   | $C_J$           | 15                                |      |      |      |      |      |      | pF                 |
| Maximum Thermal Resistance 2)   | $R_{\theta JA}$ | 75                                |      |      |      |      |      |      | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range   | $T_{J, TS}$     | - 50 to + 150                     |      |      |      |      |      |      | $^\circ\text{C}$   |

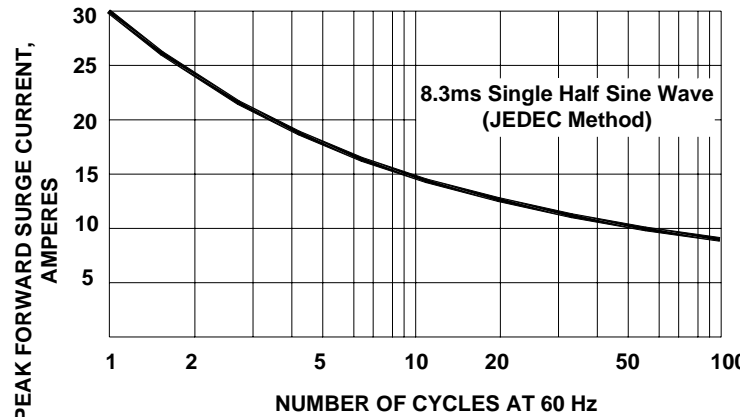
Note 1. Measured at 1 MHz and Applied  $V_r=4.0$  volts

2. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

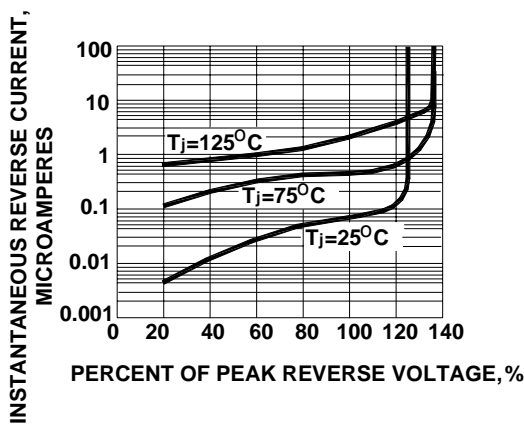
**Typical Characteristics**



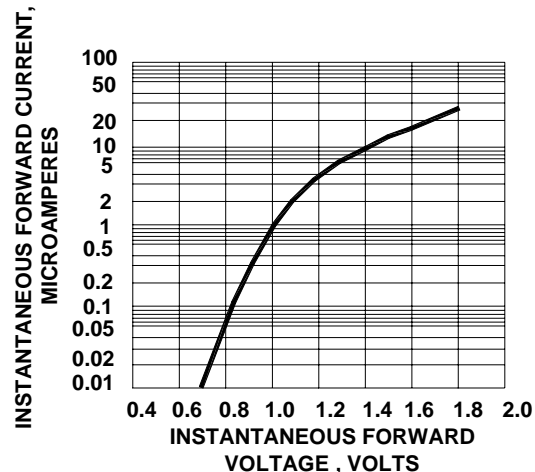
**Fig. 1-FORWARD CURRENT DERATING CURVE**



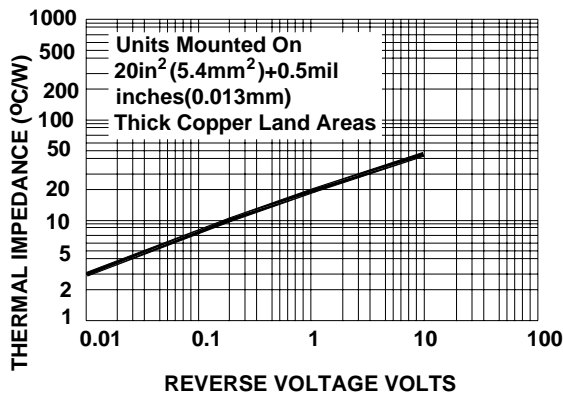
**Fig. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



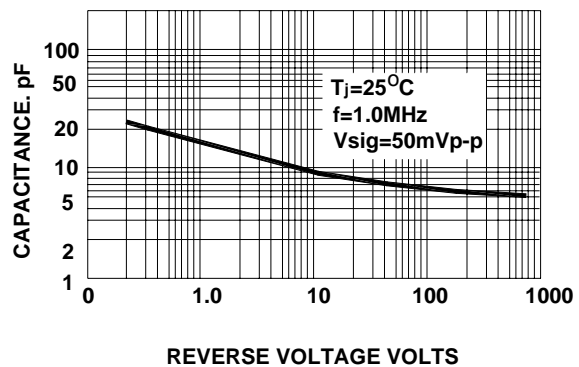
**Fig. 3-TYPICAL REVERSE CHARACTERISTICS**



**Fig. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

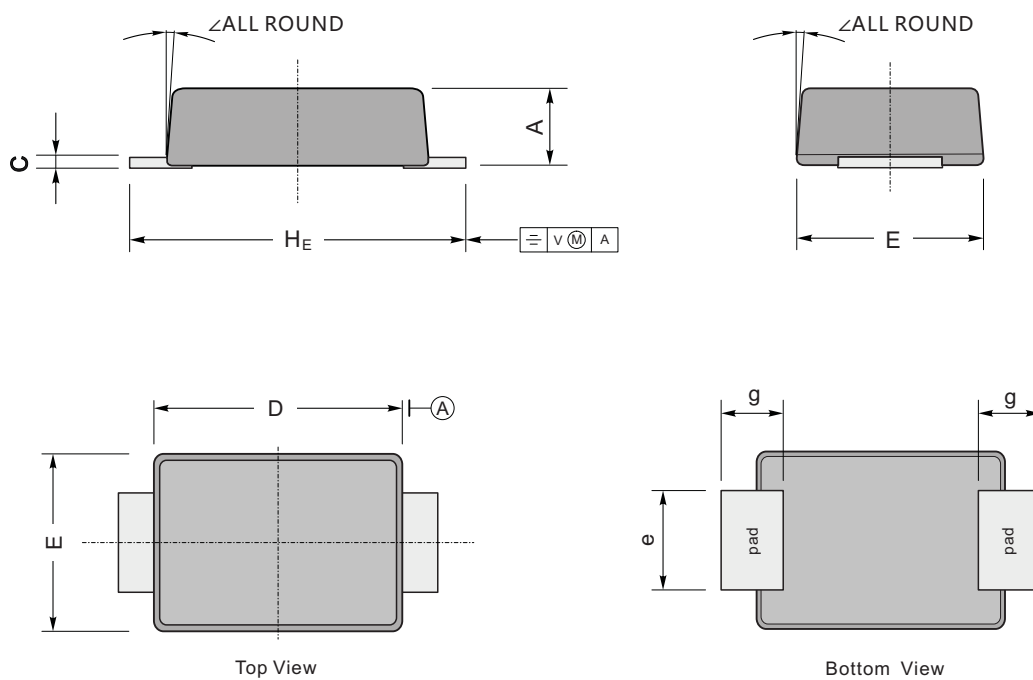


**Fig. 5-TRANSIENT THERMAL IMPEDANCE**



**Fig. 6-TYPICAL JUNCTION CAPACITANCE**

**SMAF Package Outline Dimensions**



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| mm   | max | 1.1 | 0.20 | 3.7 | 2.7 | 1.6 | 1.2 | 4.9            | 7° |
|      | min | 0.9 | 0.12 | 3.3 | 2.4 | 1.3 | 0.8 | 4.4            |    |
| mil  | max | 43  | 7.9  | 146 | 106 | 63  | 47  | 193            |    |
|      | min | 35  | 4.7  | 130 | 94  | 51  | 31  | 173            |    |